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Foreign Direct Investment in Mongolia – Its determining factors and policies

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In Prague on 27. July 2012 / Enkh-Amgalan Renchindorj /……

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Abstract

Title: Foreign Direct Investment in Mongolia – Its determining factors and policies

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Abstract

It is considered that Foreign Direct Investment (FDI) has an important role for economic growth and economic development in particularly developing countries. In today's world are almost all countries that involved in the process of international investment cooperation. It has become axiomatic that sustainable economic development is impossible without the effective participation in global economic processes, including those without the active involvement of Foreign Direct Investment (FDI).

Mongolia is a one of the fastest growing country in the world and like any other developing countries; nowadays FDI is one of the important factors in the economic development of Mongolia. This country has rich natural and mineral resources and recently has discovered world's largest copper-gold ore and become one of the top FDI attracting countries in the world. In order to use its resources efficiently, authorities need to study from others experience, not to repeat their mistakes but ought to learn from their success.

In this thesis I wanted to introduce important theories about FDI that have been studied many years and also possible risks that has occurred over the years in order to study and learn from it. I used regression analysis to determine the how important is FDI and Domestic Investment to the GDP growth and also tried to analyse which factor is significant to attract the FDI inflow.

Keywords: Foreign Direct Investment, theories, economic growth, domestic investment, Dutch disease, Mongolia, investment, regression analysis, estimation,

Number of characters: 78,426

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Introduction

It is considered that foreign direct investment (FDI) has an important role for economic growth and economic development in developing countries. The purpose of my thesis is to describe and analyse the role of foreign sector's activities in Mongolia. In our country foreign investment has been increasing over the past few years and enlarged number of the companies with FDI is already leading certain sectors of the economy. Consequently, it is important to study the role of foreign sector in the economic activities and to identify influences of returns of those foreign investments in economic growth. Its objective is to analyse the relationship between FDI and economic growth by using econometric estimation.

Mongolia is a country with rich natural and mineral resources and recently has discovered world's largest copper-gold ore and become one of the top FDI attracting countries in the world. Using its resources efficiently, Mongolia can be one of the developed countries in the world in short time. A risk of Dutch disease is introduced in this thesis in order to learn from one country's mistake to avoid possible negative consequences.

In Chapter 1 Foreign Direct Investment (FDI) will be defined. Many different economists and famous writers have defined FDI in their certain ways over the years and those theories and hypothesis about FDI will be introduced. Moreover in this chapter I will try to answer the question of why FDI occurs and exists.

Foreign Direct Investment in Mongolia will be illustrated in Chapter 2. Mongolia is a country with rich ancient history but nowadays it is a country with small economy and according to WTO[1] Mongolia has developing country status. In this chapter history of economic transition and investment pattern in Mongolia will be introduced and moreover I will try to illustrate what are the factors that attract FDI in Mongolia.

In Chapter 3, using econometric estimation in the first place I will analyse the relationship between GDP, FDI inflow and Domestic investments. Then using data from

[1] WTO – World Trade Organization (www.wto.org)

national statistical office in Mongolia, World Bank database and Mineral Resource Authority of Mongolia I will analyse the relationship between FDI and other attracting factors. Chapter 4 provides conclusion of my thesis.

Chapter 1

Foreign Direct Investment

1.1 Definition and Background

In the processes of economic globalization foreign investment is playing important role as much as an international trade in goods and services. So a natural question is arising that why it is so important? In today's world are almost all countries that involved in the process of international investment cooperation. It has become axiomatic that sustainable economic development is impossible without the effective participation in global economic processes, including those without the active involvement of foreign direct investment (FDI)

In the economic literature there are a number of modern concepts to explain the foreign direct investment and he role of FDI in economic growth. There is no specific definition of FDI owing to the presence of many authorities like OECD[2], IMF[3], IBRD[4] and UNCTAD[5]. All these bodies attempt to illustrate the nature of FDI with certain measuring methodologies. (S.Chatterjee 2009).

A classical definition of FDI is a "company from one country making a physical investment into building a factory in another country". According to IMF threshold, FDI described as "ownership or control of 10 percent or more of an ownership of the ordinary shares or voting power or the equivalent for unincorporated enterprises". The definition which provided by IMF is adoptod by most countries and also by UNCTAD for providing FDI data.

Moreover, different economists, writers and authors have defined FDI in their certain ways. Examples are as follows:

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[2] OECD – Organization of Economic Co-operation and Development (www.oecd.org)
[3] IMF – International Monetary fund (www.imf.org)
[4] IBRD – International Bank of Reconstruction and Development
[5] UNCTAD – United Nations Conference on Trade and Development (www.unctad.org)

J. Keynes (1931) defines investment as "the current increase in the value of capital assets as a result of industrial activity of this period," or as "that portion of income for the period, which was not used for human consumption". Investing is, in the opinion of P. Masse, the act of exchange to meet the current needs of the expected appreciation of the future with the help of investment goods.

As noted by economist Pugel (1999:23) FDI is the process whereby resident of one country (the home country) aquire ownership of foreign assets for the porpose of controlling the production, distribution and other activities of a firm in another country (the host country). According to Albuquerque (2000), FDI requires neither capital flows nor investment in capacity. Conceptually, it is an extension of corporate control over international boundaries other than that of a source/home country. FDI is defined by Hines (1999) as occuring when a firm invest directly in production facilities in a country and maintains control over that investment. Selby (1999:3) defines FDI as the purchase or construction of productive capacity in a country by an individual or company based outside the country. The investment comprises a bundle of assets, some proprietary to the investor (technology, brand names, specialized skills, the ability to establish markeing networks. Etc.) and some non-proprietary (finance, many capital goods, intermediate inputs, etc.) (Augustina Asafo-Adjei 2007)

As we see all above different definitions, FDI can be defined in broader sense that company from one country (investor) making a physical investment involving a long-term relationship and control or significant influence by building a factory in another country (host country) and also having an effective voice in its management.

Multinational enterprises (MNEs), also referred to as transnational corporations (TNCs) or simply multinationals are always linked with FDI. For the current level of development of world economy is characterized by the internationalization of the economy. It has been expanding the volume of foreign operations of firms, especially their foreign direct investment over the past 30 years.

In the literature, there are several different definitions of MNCs based on the characteristics of the overall results of the company. Professor Yair Aharoni defines multinational corporations (MNCs) as: „the company is a multinational, if it operates in

more than one country and the volume of the company is increasingly growing". According to David E. Lilienthal (1960) MNCs is a corporation which is at the national capital, but internationally its feild of activities are carried out abroad in accordance with local laws and characteristics. One of the famous influential writer, management consultant Peter Drucker in his practicing behaviouristic approach he defined MNCs and took example as a U.S-based company can be called multinational, if it is headquartered in the U.S., but its organization, production activities and aspirations are not limited to the United States and senior management of corporation is not confined to the same region and personal management of thinking and acting is based on the requirements of international business, not limiting its activities in national term, including the patriotic feeling.

In a view of the above generalization of the definition, multinational companies in a broader sense can be referred to as companies that carry out international business, placing their units in different countries in order to provide best service in the markets, improve efficiency and competitiveness and efficient access to resources and factors of production and reduce the risks.

Table 1.1 *The top 30 non-financial State-owned TNCs, ranked by foreign assets, 2009 (Millions of dollars and number of employees)*

Corporation	Home economy	Government stake [b]	Industry [c]	Assets		Sales		Employment		TNI [a] (per cent)
				Foreign	Total	Foreign	Total	Foreign [d]	Total	
Enel SpA	Italy	34.7	Electricity, gas and water	157	231	44	86	43	81	57.2
Volkswagen Group	Germany	20.0	Motor vehicles	156	255	105	146	196	369	61.9
GDF Suez	France	36.4	Utilities (Electricity, gas and water)	146	247	68	111	96	197	56.5
EDF SA	France	84.7	Utilities (Electricity, gas and water)	134	348	40	92	58	169	39.0
Deutsche Telekom AG	Germany	31.7	Telecommunications	113	184	53	90	108	258	54.1
Eni SpA	Italy	30.3	Petroleum expl./ref./distr.	102	169	78	117	40	78	59.2
General Motors Co	United States	32.0	Motor vehicles	76	136	55	105	114	217	53.7
France Telecom SA	France	26.7	Telecommunications	73	133	31	64	64	167	47.0
EADS NV	France	22.4	Aircraft	72	116	54	60	75	120	71.9
Vattenfall AB	Sweden	100	Electricity, gas and water	72	83	22	27	34	40	84.9
Veolia Environnement SA	France	10.7	Utilities (Electricity, gas and water)	52	72	29	48	212	313	66.9
CITIC Group	China	100	Diversified	44	315	11	31	25	125	23.2
Statoil ASA	Norway	67.0	Petroleum expl./ref./distr.	43	97	17	74	11	29	34.4
Deutsche Post AG	Germany	30.5	Transport and storage	39	50	44	67	258	425	68.3
Vale SA	Brazil	5.5 (12 golden shares)	Mining & quarrying	39	102	20	24	13	60	48.2
Petronas - Petroliam Nasional Bhd	Malaysia	100	Petroleum expl./ref./distr.	34	126	28	63	8	41	30.7
TeliaSonera AB	Sweden	37.3	Telecommunications	32	37	10	14	20	29	73.3
Renault SA	France	18.3	Motor vehicles	30	92	29	47	66	121	50.2
Japan Tobacco Inc	Japan	50.0	Food, beverages and tobacco	30	42	29	66	25	50	55.4
Finmeccanica Spa	Italy	30.2	Machinery and equipment	29	44	20	25	32	73	62.7
China Ocean Shipping (Group) Company	China	100	Transport and storage	28	36	18	28	4	72	49.7
Lukoil OAO	Russian Federation	13.4	Petroleum and natural gas	24	79	38	68	22	143	34.0
Singapore Telecommunications Ltd	Singapore	54.4	Telecommunications	23	27	8	12	10	23	64.3
Zain	Kuwait	49.2	Telecommunications	19	20	7	8	12	13	92.1
Qatar Telecom	Qatar	55.0	Telecommunications	18	23	5	7	1	2	78.0
Tata Steel Ltd	India	12.9	Metal and metal products	16	24	16	22	47	81	65.2
Petroleo Brasileiro SA	Brazil	39.8	Petroleum expl./ref./distr.	15	200	29	116	8	77	14.2
Abu Dhabi National Energy Co PJSC	United Arab Emirates	100	Utilities (Electricity, gas and water)	14	25	3	5	3	4	67.2
Petróleos de Venezuela SA	Venezuela, Bolivarian Rep. of	100	Petroleum expl./ref./distr.	12	150	33	75	5	92	19.0
China National Petroleum Corporation	China	100	Petroleum expl./ref./distr.	12	325	5	178	30	1 585	2.7

Source: UNCTAD data

This table above shows the top 30 non-financial State-owned TNCs or MNCs, ranked by their foreign assets in millions of dollars and their number of employees. It is interesting that if look at the table we can find ou that approximately 5 million people working as employee only in the top 30 non-financial State-owned TNCs.

1.2 The theories and hypothesis of FDI[6]

Foreign direct investment (FDI) has been an interesting issue over the years. There are numbers of studies about FDI in details, also macroeconomic impacts of FDI on investment, growth, and trade, and also about microeconomic impacts of FDI. Concepts about exchanging goods and services, trading between each other and furthermore theory of international trade, those are the roots of emerging FDI.

1.2.1 Classical Theory

The classical theory laid the foundation for the analysis of global economic relations. The conclusions of these theories have become a sort of starting axioms for the further development of economic thought in this area. Most of the written literatures of FDI were based on classical theory and its assumptions. According to classical theory of foreign investment and classical trade theory, cost of production is significant to international competitiveness. Every country has advantages and disadvantages in producing certain goods and services, because they are different in capital and labour. Moreover, there is mobility of products across countries.

1.2.1.1 Absolute and Comparative advantages (Adam Smith and David Ricardo)

In late 18th century British economists Adam Smith and David Ricardo have defined the idea about international trade and its factors and first Adam Smith introduced his theory about absolute advantages and later on Ricardian comparative advantage theory has established and published.

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[6] Sarinthorn Sosukpaibul (2007), "The Relationship among Foreign Direct Investment Flows, Government Policy and Investment Strategy": The Case of Thailand

Adam Smith in his famous book of „Inquiry into the Nature and Causes of the Wealth of Nation“ (1776) established that the basis for the development of international trade is the difference between absolute and to import products from countries where costs are absolutely lower and to export those goods where costs are below the exporters. Smith has shown that countries interested in the free development of international trade because they can benefit from it regardless of whether they are importers or exporters. The country has an absolute advantage if there is such a commodity which's per unit cost is absolutely lower than the others.

The Classical trade theory and its determinations are based on Comparative Advantage theory. David Ricardo in his book "On the Principles of Political Economy and Taxation" (1817) established his Comparative Advantage theory and explained that a country will export those goods, which it can produce relatively cheaply and import those goods in the production of which foreign countries have comparative advantage.
The theory of comparative advantage is based on several assumptions. It comes from the presence of the two countries which are producing two goods by using one factor of production which is labour, this factor is homogeneous and can freely move between industries, the production cost is only in the form of wages, which is also same for all professions, ignoring difference in wage levels between countries, zero transport costs and the availability of free trade. These initial conditions were necessary to identify the basic principles of international trade.
Following famous example would explain more.

Table 1.2 England and Portugal's Wheat and Wine production

Country	**Wheat**	**Wine**
	Cost Per Unit In Man Hours	**Cost Per Unit In Man Hours**
England	15	30
Portugal	10	15

In Table 1.2 a unit of wine in England costs the same amount to produce as 2 units of wheat. Production of an extra unit of wine means foregoing production of 2 units of wheat (ie the opportunity cost of a unit of wine is 2 units of wheat). In Portugal, a unit of wine costs 1.5 units of wheat to produce (ie the opportunity cost of a unit of wine is 1.5 units of wheat in Portugal). Because relative or comparative costs differ, it will still be mutually advantageous for both countries to trade even though Portugal has an absolute advantage in both commodities.

Portugal is relatively better at producing wine than wheat: so Portugal is said to have a **COMPARATIVE ADVANTAGE** in the production of wine. England is relatively better at producing wheat than wine: so England is said to have a comparative advantage in the production of wheat. (Alain Anderton 2000)

1.2.1.2 Heckscher-Ohlin Theory

Development of the classical theory of international trade is associated with the Heckscher-Ohlin model. This model has added a more characteristics of production that are left out of the simple Ricardian model. Swedish economists Eli Heckscher and Bertil Ohlin first illustrated the idea and theory about adding more factors in the production which was published in the book “Interregional and International Trade” (1933) by Bertil Ohlin. This theory is based on the same premises as the theory of absolute and comparative advantages by Adam Smith and David Ricardo. The main difference is that it comes from the presence of not one but two production factors, which are labour and capital. The model assumes that in the final production only labour and capital will be used and the theory explains that a country, which is capital-abundant, will benefit from exporting capital-intensive products, whereas the country, which is labour-abundant, will benefit from exporting labour-intensive products to the common market.

Heckscher-Ohlin theory is the modern approach to international trade and is based on the following assumptions:

a. There are two countries involved
b. Each country has two factors (labour and capital)

c. Each country produce two commodities or goods (labour intensive and capital intensive)
d. No barriers to trade, no transportation cost
e. Perfect competition in both commodity and factor markets
f. Full employment. All factors are fully employed.
g. Identical technologies, identical production functions across countries
h. Factors are mobile in each country but are immobile between countries
i. International trade between the two nation is balanced

Besides all above roots of classical theory on trade and investment that have been mentioned, there are a number of theories that explaining FDI, and those theories are as follows;

1.2.2 Market Imperfection Paradigm

There has been a question of why a foreign multinational company is able to compete with domestic companies whose have knowledge of domestic market, consumer tastes and legal and institutional framework of bussiness. The Hymer-Kinleberger theory has tried to answer the question above.
When firms decide to do bussiness in abroad they face the additional cost of operating from a distance, costs of communication and time lost in communicating information and decisions and also costs of misunderstanding that could lead to mistakes in decision-making. It seems that all those additional costs bring less profit to the company, but in reality MNEs have been increasing over the years despite their additional costs.

Canadian economists Stephen Hymer (1976; 1960) has distinguished FDI from other foreign capital movement. In order to seperate it he used the word “control” or ownership. According to the Hymer-Kindleberger theory, the foreign company must posses some compensating advantages which allow it to compete on equal terms with local companies. Hymer’s theory has two components.

First, as the world market is imperfect, it is possible to operate or control an enterprise in foreign countries. When firms doing business across abroad, they face

additional costs while entering a new environment, such as the difficulty in communication, scarcity of the host country's information, fluctuation in exchange rates and sometimes discrimination from political instability. The Hymer-Kindleberger theory has focused on advantages of individual firms. When firms want to do bussiness in foreign country they must possess some kinds of potential advantages in order to compete with local firms. Potential advantages include innovative, ownership of a brand name, special marketing skills, patented new unavailable technology, source of finance, and managerial skills etc.

Secondly, reason for FDI existence is exploitation of the firm's advantage. Hymer explained that since marke is imperfect, owner of the firm who has the advantage could not appriciate the full return. Foreign direct investment is an alternative choice for minimizing the cost of uncertainty. In addition, direct ownership of firm is strategy used for negotiating in the imperfect market. (S Sosukpaibul 2007)

Richard E. Cave (1971) has continued Hymer's idea. He argued that a firm could expand its bussiness in foreign market through horizontal and vertical level. Cave tried to explain why firm has to make these type of investment. Horizontal investment can be stated as that foreign firm produces the same product in host country as they produce at home. The firm has to possess special characterized assets, which create an advantage over firms whose are in the host country. (S Sosukpaibul 2007)

1.2.3 Product Life cycle theory

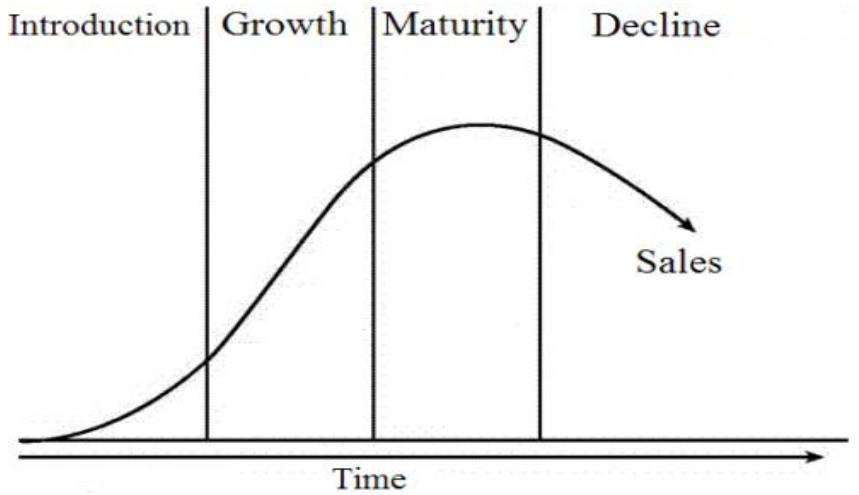
In the mid-60s. American economist R. Vernon proposed the theory of product life cycle, in which he tried to explain the development of world trade in manufactued goods based on the stages of their life. The life cycle of the product comprises four stages. Those are introduction, growth, maturity and decline. Using this theory Vernon has tried to explain the existence of FDI.

- ***Introduction*** - is the stage of creation and development of new products in the country, because need has arisen within the country. Therefore, at this stage production of a new product has a low-volume nature, it requires highly skilled

workers and the country is concentrated in innovation (usually industrialized countries), and the manufacturer has a near monopoly position and only small part of the product enters a foreign market.

- ***Growth*** – is the stage that has increasing demand for the product and its production is expanding, and gradually spread to other developed countries. The product becomes more standardized and there will be increasing competition between manufacturers and expanding exports.
- ***Maturity*** – is the stage of large-scale production predominates, the competition becomes the dominant cost factor, and with the expansion of markets and the diffusion of technology innovation then the country has no longer competitive advantage. It starts with the movement of production to developing countries where cheap labor can be effecively used in standardized production processes.
- ***Decline*** - is the stage where the demand of production is declining especially in developed countries and markets are concentrated mostly developing countries and the country become a net importer of innovation.

Figure 1.1 *Vermon's product life cycle*



Source: www.provenmodels.com

The theory of product life cycle rather realistically reflects the evolution of many industries, but not a universal explanation of the trends in international trade. If research and development, advanced technology is no longer the main determinant of competitive advantage, the production of the product will actually move to countries with comparative advantage to other factors of production, such as cheap labor. However, there are lot of goods (with a short life cycle, high cost of transportation, with

significant opportunities to differentiate on quality, narrow range of potential customers etc.) that do not fit into the theory of life cycle.

1.2.4 Internalization theory

The theory of internalization has formulated in 1976 by Peter Buckley and Mark Casson. But the first concept of internalization theory was illustrated by Coase (1937). The concept of internalization (the union of technology and know-how within the company) establishes a link between foreign direct investment of large corporations and their internal organization**.** The concept assumes that the motivation of foreign direct investment is the existence of market imperfections. According to the theory, large firms can expand their activities in the presence of a coherent internal structure, excluding competitors on their know-how. The authors criticize the previous theory (in particular, the theory of Hymer, Kindlbergera) for excessive emphasis on the production function and the neglect of other unique advantages (the ability to lead, an international organization activities, marketing and supply resources, human resource development and a healthy financial management) that enable companies to go to the leaders and spread its operations to other markets and industries.

The basic ideas of the theory are as follows:

- MNEs can expand its activities in the presence of a coherent internal structure, excluding competitors on their know-how.
- A considerable part of the formal international operations is actually intercompany transactions between units of MNEs.
- International activities, marketing and management resources, financial management, etc., allow companies to go into the leaders and share their activities to other markets.
- The unique advantages of MNEs (the ability to lead, an international organization activities, marketing and supply resources, human resource development and a healthy financial management) allow companies to go into the leaders and distribute their operations to other markets and industries.
- International operators derive their competitive advantage is not due to the use of only one specific factor in a particular functional area, but because of its

ability to internalize the know-how, rather than pass it on to other (external) organizations.

- The tax treatment and other restrictions, as practiced in some recipient countries (high tariffs, mandatory purchase of components from local suppliers, and other non-tariff barriers) are also forcing companies to internalize their activities and to organize it "under one roof." From this it follows that MNEs exports are less profitable than the target investment, especially if their chosen target markets are large and strategically important.
- In almost all industrial sectors - where Research & Development costs are high and there is capital-intensive production (chemical, automotive) and a large number of intermediate goods in the form of components and semi-finished products (consumer electronics, pharmaceuticals) - there is internalization.
- Progressive FDI agency in the world linked together aspect of the high costs of Research & Development (R&D) and transnationalization (FDI) potential, if there is an alternative, they give preference to those multinationals that spend on Research & Development and most of the turnover. This ratio is also used to attract new MNEs to the development of specific industrial sectors.

Advantages of the theory:

- The theory of internalization reveals the reasons for exit of companies in the international market through foreign direct investment.
- The theory is the starting point for many studies on the behavior of MNEs, its main provisions are based on the findings of several areas of economic thought, which gives the openness and flexibility for future development. It provided a clear scientific basis for future research (Dunning, Porter), which was an attempt to turn it into a broader concept of linking foreign direct investment flows to competitive advantage, and trying to internalize the economy and the attractiveness of the recipient.

Disadvantages of the theory:

- The concept of internalization can not cover the entire process of transnationalization and more acceptable for the analysis of resource allocation and growth of firms.

- The theory does not answer the question of why should be placed overseas production capacity of products - regardless of whether they belong to the power of the company or its contractor. In other words, the company gets a competitive advantage by locating production in foreign countries.

1.2.5 The Ecletic Theory

An eclectic theory of international production was first established in the late 1970's. A famous American scientist John Dunning (1977) merged the existing theories of foreign direct investment and developed the new theory called the eclectic theory of foreign direct investment. The eclectic theory is based on the OLI paradigm (Ownership-specific advantage, Locational advantages and Internalization advantages). John Dunning believes that investment decisions depend on three main conditions: first, benefits of ownership - ownership specific advantages (O), and secondly, the benefits of location - location specific variables (L), and thirdly, the advantage of internationalization - internalization incentive advantages (I).

The first condition - ownership specific advantages (O) - is associated with the ability to profit from creating its own production in abroad.The company must have a net benefit of ownership (higher degree of advanced technologies and the possession of the implied assets), which gives opportunity to invest abroad. Otherwise, it can be absorbed by the foreign company itself. Dunning therefore proposed the creation of conditions which would stimulate technological competitiveness of companies in the country - the availability of trained manpower, technical staff and managers, institutions conducting R & D, and when other countries developing these technological advantages, he calls it "entrepreneurial" competitive.

The second condition - location specific variables (L) – is the existence of comparative advantages in countries where MNEs expand profitable production, than leave all the production facilities in their country of residence. Countries which has advantages in location will have greater FDI inflows than the outflow of capital in abroad. Consequently, there is a direct relationship between location and the benefits of FDI inbound and the forming an inverse relationship between location advantages and

FDI outbound, and a direct link between the benefits of ownership and outbound FDI and reverse between the benefits of ownership and FDI inbound. The difference between the inbound and outbound FDI equal to zero may mean that the country does not have any advantage in any of the categories, or has the advantages of ownership and internationalization, which are balanced by the benefits of location.

The third condition - internalization incentive advantages (I) - is that a firm will get more advantages to use its outputs by itself rather than to sell or lease them to foreign firms. We have explained it in the internalization theory.

If we see all above conditions we could conclude that the foreign direct investment are the best means of servicing foreign markets, but only when there are specific geographical advantages. Specific geographical advantages may be associated with economic and political factors. There are important economic factors: the volume of the internal market, geographic distribution of natural and physical resources, the price of factors of production, quality and productivity, the cost of international transport and communications.Thus, the eclectic theory discovered there is a positive correlation between the competitiveness of the firm and its degree of internationalization, as well as international success relates not only with the presence of competitive advantages, but also with the potential of the global mobilization within the established local markets.

1.2.6 The multinational Enterprise theory

American economist James R. Markusen (1991) has developed The Multinational Enterprise theory from the ecletic theory. He has tried to answer the most basic question that why multinationals exist and why needed goods and products are not supplied by exports? By answering those questions Markusen illustrated the concept of knowledge-based firm's assets. Which is also expressed as firm-specific asset. (FSAs). Those are assets such as human capital of the employees, reputation or patents of the firm. He claimed that there are two reasons why these knowledge-based assets generate FDI. First, at low cost, knowledge-based assets can be easily transferred. Second, at very low cost, knowledge can be supplied to additional production facilities, because often it has public goods characteristic. In the theory of multinational enterprise, a

concept of firm-specific assets are important. Because these assets can be managed at very low costs and their output is ususally very high.
The Multinational Enterprise Theory has three major motivations which are as follows:

1. Market oriented foreign direct investment
2. Raw material based investment
3. Cost reducing investment

Market oriented FDI is toward to countries with large home markets, also markets that have rapid growth. This type of investment take place in the advanced industrialized countries or rapidly growing markets in developing countries and also iin the newly industrializing countries.

Raw material based investment take place in usually less developed countries which have scarce of technik technology and have poor knowledge of producing. Multinationals using their advanced technik technology they easily enter the market and empty its raw materials which is in a broader way natural resources of the country.

Cost reducing investment is important factor to the profit. In every firm labor is a one of the main cost factor and it can be reduced by relocation. Using a cheap labor has led to multinationals relocate their operations where there is low cost labor. This action led to generate FDI in host country.

According to Markusen multinationals arise in industries which have certain technological and informational characteristics and there exists somehow some kind of trade barrier. Generally, there are many theories explaining and emphasizing the importance of the FDI phenomenon, however today there is no general theory of FDI. Some theories of FDI can emphasize only the phenomenon in the short run but some theories explain only partial terms.

1.2.7 New trade theory

Why do different countriestrade with each other? It seems that the answer to this quesion came before Krugman. During the days of David Ricardo the main explanation for the existence of international trade was the principle of comparative advantage. By the miidle of 20th century textbooks have contained the Hecksher-Ohlin model which has simply explained there are two goods and two countries with different factors of production. In this world every country must have a comparative advantag and a country which is capital-abundant will benefit from exporting capital-intensive products, whereas the country which is labour-abundant will benefit from exporting labour-intensive products to the common market. From the analysis of this model there is a very simple conclusion that we can make, which is when couuntries are more different from each other, they will gain more profit while trading with each other. Developed countries which have relatively large capital, they trade with developing countries which have a lot of cheap labor but they do not trade with each other. The Free Trade Agreement applies only to those countries whose have very different production factors.

The practice of international trade after the Second World War did not match the predictions of the Heckscher-Ohlin model. Developed countries traded primarily with each other, despite the strong similarity in the factors of production. Intensively traded between themselves and the trade unions united in European countries eventhough there were no differences in the initial inventory. American economists Paul Krugman found the explanation of trade between similar countries, and hence the fact that workers do not go to mass demonstrations to protest against exploitation. He based his idea, which was known to Adam Smith: the more the firm produces, the lower the production costs per unit of output. . Economists call this "increasing returns to scale." If the production has the property, perfect competition is impossible - in equilibrium, that is, when existing firms do not want to leave the market, and those who have not yet joined, do not want to come in, the firms can earn a positive profit. Because of increasing returns to scale any company profitable to expand production and therefore they seek new markets eventhough domestic demand is limited. At the outer edge has a local producer - he did not have to bear transportation expenses, to pay customs duties, etc. This means

that the exporter has to settle for lower margins and lower profits - this is a standard result from the basic course in microeconomics.

However, due to enlargement of the production one way or another benefit - the cost of its products declines. Industries in this model is extended in two ways: firstly, due to the influx of new businesses that provide product line expansion, and secondly, by increasing the size of firms. Now the same two countries makes sense to trade with each other.This model of Krugman brought the first success, followed by another and another. Theoretical problems that naturally arise in the economy of international trade and resolved one after another**.**

1.2.8 Occurence and Existing FDI

As we see above all the theories there are too many possible answers that why FDI exists. Japanese profesor K.Ohno, in his study 2004, he suggested theoretically three possible explanations that why FDI occurs.

The first explanation is based on the Hechsher-Ohlin trade theory which is the factor proportion hypothesis. Hechsher-Ohlin theory explains that there are two important factors in the production and trade, which are capital and labor. The country‘s production can be determined by the capital-labor ratio to show whether country is producing capital-abundant production or labor-abundant production. Countries with less capital and more labor, i.e. K/L ratio is low, will produce labor-intensive products while countries with more capital and less labor, i.e. K/L ratio is high, will produce capital-intensive products. From this Hechsher-Ohlin theory, FDI occurs as a labor abundant country accumulates capital through investment and its product mix will also shift.

The second explanation that why FDI occurs is the technology ladder hypothesis. According to this theory, production pattern is determined by whether a country can acquire necessary skills and technology to produce more complicated goods. It is not based on capital-labor ratio. The theory emphasize that learning is very important and put quality over quantity. It concludes that if countries have no capacity

improvement, even if they have a lot of investment, it is a waste of resources and can not able build new industry.

The third explanation of FDI's occurence is the industrial cluster hypothesis. This theory explains that through the accumulation of FDI industrialization starts. The main point of this study is whether the government can offer attractive FDI environment, whether the firm can perform in free business environment or at the low cost of doing business. At the beginning only cheap labor is used for simple assembly, and then, slowly parts suppliers gradually emerge and further it becomes possible to produce the parts and materials domestically. Moreover there will be a chain between assemblers and parts supplier and more investors will come. This process bring capital accumulation and improvement of domestic capability.

1.3 Types of FDI

FDI flow into economy comes in various ways and types of flow determine its multiplier effect in economy. In this chapter five broader types of FDI will be disscused. Those are export-oriented FDI, market-development investment, government-initiated investment, aquisition investment, and greenfiield investment.

Export-oriented FDI **–** is described by Reuber (1973) as the type of investment that reflects a wide range of considerations such as the desire to develope secondary and more diversified sources of supply by way of obtaining lower-cost products to be used either as a inputs or for sale elsewhere. (Augustina Asafo-Adjei 2007)

Market-development investment **–** is a type of investment that investors sell the final product in the host country and in the long run the host country's market will be grow in size hence become profitable, the investment may then be undertaken. (Augustina Asafo-Adjei 2007)

Government-initiated investment **–** is a type of investment that occurs when the host country's governmet decides to provide incentives to the foreign investors in order to attract the FDI in the home economy.

Aquisition investment **–** is a type of investment that foreign company purchases a company in host country and taking a control of the ownership of the company. In this type of investment, usually there is no additional production to the country.

Greenfield investment **–** is a type of investment that the foreign investors build a new firm in the host country by building a new facilities from the ground up. This type of investment brings positive influence to the host economy by creating a place of empolyment.

1.4 Relationship between Economic Growth and FDI[7]

There is a substantial amount of papers about FDI and there is a growing view in recent years that FDI is positively correlated with economic growth. Theoretically, this view has been bolstered by recent developments in growth theory, which highlight the importance of improvements in technology, efficiency, and productivity in stimulating growth. In this regard, FDI's contribution to the growth comes through transferring advanced technology from the industrialized to the developing countries.

Any enlargement of FDI and numbers of economic entities with foreign investment potentially leads to the generation of economic growth at the macroeconomic level through direct or indirect effects. At the macroeconomic level, cross-section empirical work by Borensztein et al (1998), Carkovic and Levine (2002) and Alfaro et al (2003) find little support that FDI has an exogenous positive effect on economic growth. However, their evidence suggests that local conditions, such as the level of education and the development of local financial markets play an important role in allowing the positive effects of FDI to materialize. In the widely cited paper in the literature, Borensztein et al. (1998), using a dataset of FDI flows from industrialized countries to sixty nine developing countries, find that FDI is an important vehicle for transferring technology and higher growth only when the host country has a minimum threshold of human capital. De Mello (1999) finds a positive and significant impact of FDI on output growth in OECD and Asian non-OECD countries. Elsewhere, Reisen and Soto (2001) find a positive correlation between FDI and portfolio equity flows on the one hand and GDP growth on the other. Hence, a positive and significant effect of FDI on economic growth and development is evidenced in many working papers. In order to theoretically demonstrate the impact of FDI on economic growth by FDI $\uparrow \rightarrow$GDP $\uparrow$ mechanism we use simple endogenous growth model. If we assume production function

[7] Gan – Ochir Doojav (2008), "Foreign sector in economic growth", Ulaanbaatar, Mongolia.

depends on capital (K), human capital (H) and labor (L) and technology (A) intensifies these factors, then the function takes the following formula:

$$Y = F(AK; AH; AL) \qquad (1)$$

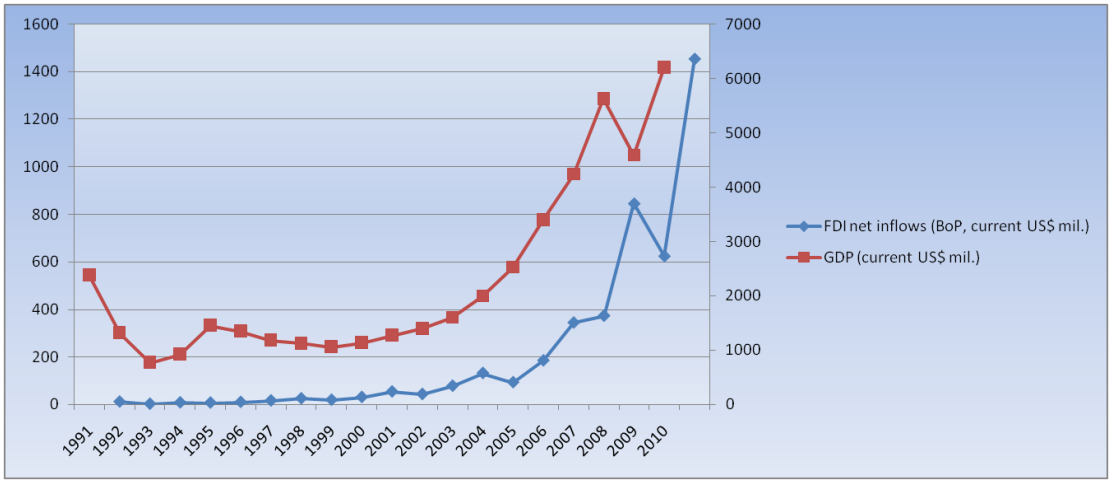
Theoretically the equation (1) is considered as a production function with labor saving technology, and its capital and human capital are intensified by technology. An increase in FDI leads to a creation of new technology, improvement in capitalization and accumulation of human capital and thus augmentation in labor intensity. This further causes a growth in economy and development. The mechanism can be illustrated as follows:

$$FDI \uparrow \Rightarrow A \uparrow, (AK) \uparrow, (AH) \uparrow, (AL) \uparrow \Rightarrow Y \uparrow \quad \text{and FDI} \uparrow \Rightarrow Y \uparrow \ .$$

Thus theoretically FDI has a positive direct impact on economic growth and has an indirect effect on development via introduction of new technologies and machinery, better education and knowledge, higher employment (higher household income), improved infrastructure and environment, and enhanced tax collection and etc., Moreover, there can be an opposite effect on economic growth like enhanced growth due to increased FDI may cause more FDI further. In other word, foreign investor will be increasingly interested in investing when the host country is experiencing economic growth, it's certain industry promises high return and financial market is stable. In this case we should also study the channel of

$$GDP \uparrow \rightarrow FDI \uparrow$$

Figure 1.2. *FDI inflows and GDP in USD million 1991-2010*



Source: UNCTAD stat

1.5 Risk of the Dutch disease

The emergence of this term is associated with the discovery of natural gas fields in the North Sea which belongs to the Netherlands in the late 1950's - early 60's. The ensuing increase in exports of natural gas has led to a significant rise in the national currency, which negatively impact on other export-oriented industries. So when it comes to the "Dutch disease" means in the first place, the growth of the real exchange rate due to the increase in exports of some sectors that have a negative impact on other industries and the economy as a whole. Some commentators believe "Dutch disease" is one of the varieties of the "Spanish disease", which is known to the world since the time Columbus discovered America. The Spaniards started having access to a wealth of new land - mainly gold and silver. Instead of using the money for the development of their country, they began to spend it on luxury consumptions. As a result, inflation in Europe has begun an unprecedented size, which led to deterioration in living standards. "Spanish disease" characterized by high dependence of Spain from its colonies. For example, after the English pirates and corsairs sank one of the "golden" squadrons which was carrying the treasures of the Indians, in Spain began a severe economic crisis that affected the whole of Europe (in particular, a number of Italian banks went bankrupt, the creditors of the former chief of Spanish Crown). However, the relationship of commodity exports and the national currency "Dutch disease" is not exhausted. There are other mechanisms of negative impact. As the prices of resources are subject to significant fluctuations and it is determined by conjuncture of world markets, the exchange rate fluctuates with the price of exported resources because the share of these resources are occupied in the total exports. An overvalued exchange rate has a negative impact on industries related to foreign trade (as in the fields of exporting and importing to), and the volume of foreign investments into the economy. If the domestic industry is heavily dependent on imports (for example, the economy specializes in the processing of imported semi-finished products), the exchange rate volatility will have a negative effect on the economy. Moreover with an abundance of natural resources and therefore, huge revenues from their exports, the population may be a sense of false security, and can dull attention to such critical elements of economic policy as free trade, bureaucratic efficiency, etc. In other words, the government may seem that much easier to increase the wealth from natural resources which requires less

effort than through well-conducted and consistent economic policies. The abundance of revenue from exports of raw materials may lead to the disappearance of incentives for private and public institutions to make any savings. Since savings are a key factor for future economic growth, a sharp reduction in their course can lead to a slowdown in economic growth.

Existence of Dutch disease in Mongolia recently has not occurred yet, but it is always better to learn from the others past mistake to avoid its consequences and create better place of ourselves.

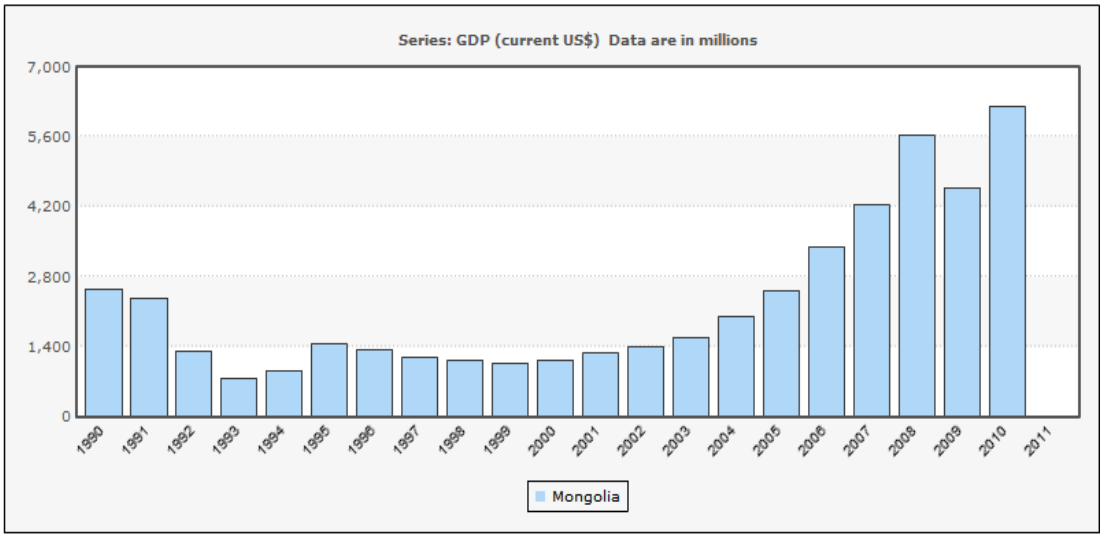
Chapter 2

Foreign Direct Investment in Mongolia

2.1 History of economic transition

Mongolia is a landlocked country in East Central Asia and strategically positioned between Russia to the north and China to the south. This country has an area of 1,564,116-km2 land (ranked 18th largest country in the world)[8] and population of 2,754,685 people (www.cia.gov) and it is the lowest population density country in the world. (Almost 1.8 people per square kilometre). During the Soviet Union time Mongolia had a centrally planned economy over 60 years and in 1990 it has transformed to free market economy. Mongolian economy is based on herding, agriculture and mining and it is one of the fastest growing economies in the world. (GDP growth was 10.6% in 2012 and ranked 3rd in the world)[8]. (www.cia.gov)

Figure 2.1 *GDP histories in Mongolia 1990-2010*



Source: World Bank data

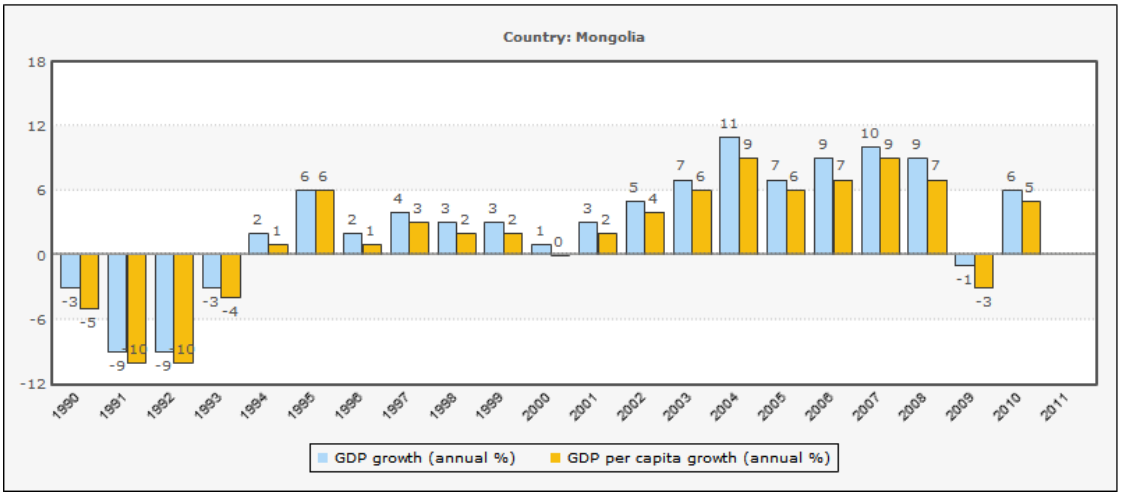
Transformation of economic liberalization has started in year 1990s and after that, privatization of state-owned enterprises and trade took place in 1993. During this time

[8] According CIA world book (www.cia.gov)

GDP of Mongolia went to its lowest point which was approximately $0.772 billion a year. Over the years GDP has been raised constantly and in 2011 it has reached its peak of $8.506 billion a year according to IMF statistics.

Mongolia joined the World Trade Organization (WTO) in January 1997 and become the first country in transition that joined WTO. Supporting foreign trade liberalization and also integrating into the multilateral trading system under the WTO has created many new opportunities for economic development of Mongolia.

Figure 2.2 *GDP annual growths 1990-2010*



Source: World Bank data

During the transformation period growth in GDP were at its lowest point of -10% and started growing during the year 1993-1994 where privatization took place in the first around. Since that time GDP growth was constantly growing and in year 2004 it has reached its highest point of 11% growth. During the world economy crises in 2008 and 2009 economy growth has declined to -3% which shows us that how Mongolian economy is highly dependable from the world economy. After the crises it got better and growth of GDP went back to 6% in 2010. According to CIA world book Mongolian GDP growth in 2012 has reached 10.6% and Mongolia become one of the highest growing economies in the world and ranked in the 3rd among the other countries of the world.

Agriculture and Mining sectors are the main part of the Mongolian economy and together produce almost half of the GDP. Especially, lately mining sector becomes the leading sector, because of discovering Oyu Tolgoi mining which is the world's largest

copper-gold ore and using its resources, it is expected upon completion to account for more than 30% of the country's GDP.

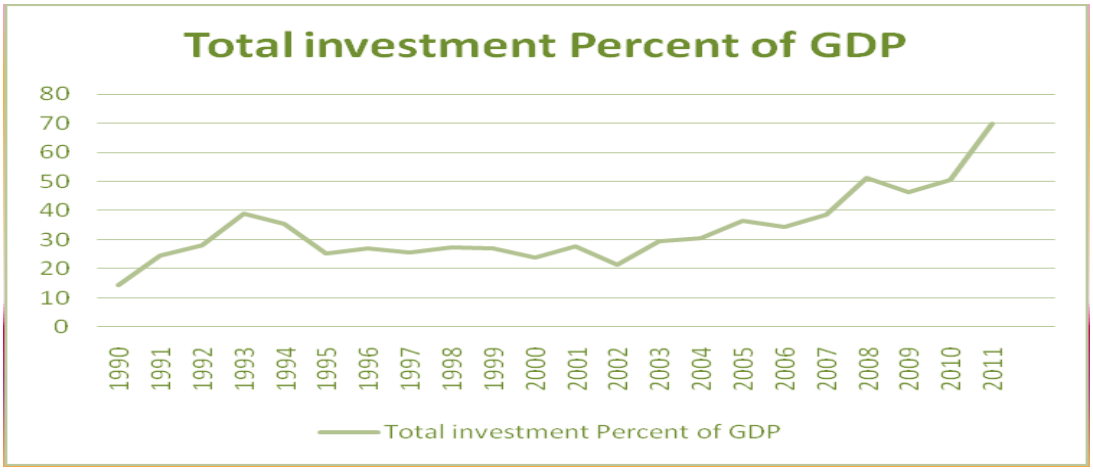
Figure 2.3 *Agriculture and Mining Sector in GDP*

Source: Mongolian National Statistical Office

2.2 Total investment in Mongolia

Since Mongolia became a country with free market economy, domestic and foreign investments needed to take place to support economic growth. Over the years investment is the key factor to the Mongolian economy and it has reached from 14% to 70% of GDP over the 20 years.

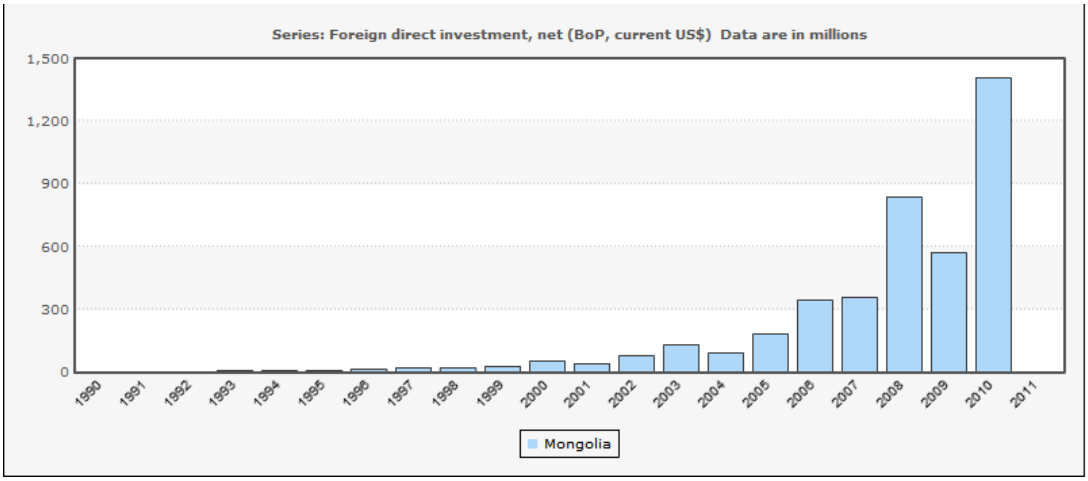
Figure 2.4 *Total investment in percent of GDP in Mongolia 1990-2011*



Source: IMF database

Moreover foreign investment has been increasing over the past few years as well and enlarged number of companies with FDI is already leading certain sectors of the economy.

Figure 2.5 *Foreign Direct Investments 1990-2010 in Mongolia*



Source: World Bank data

During the transformation period FDI was at the lowest point of 2.0 million USD in 1992 and over the year it has been growing constantly and during the world economic crises in 2008-2009 FDI went from 844 million USD to 623 million USD. After the crises FDI went back to its growing path and has reached 1454 million USD in middle of 2010.

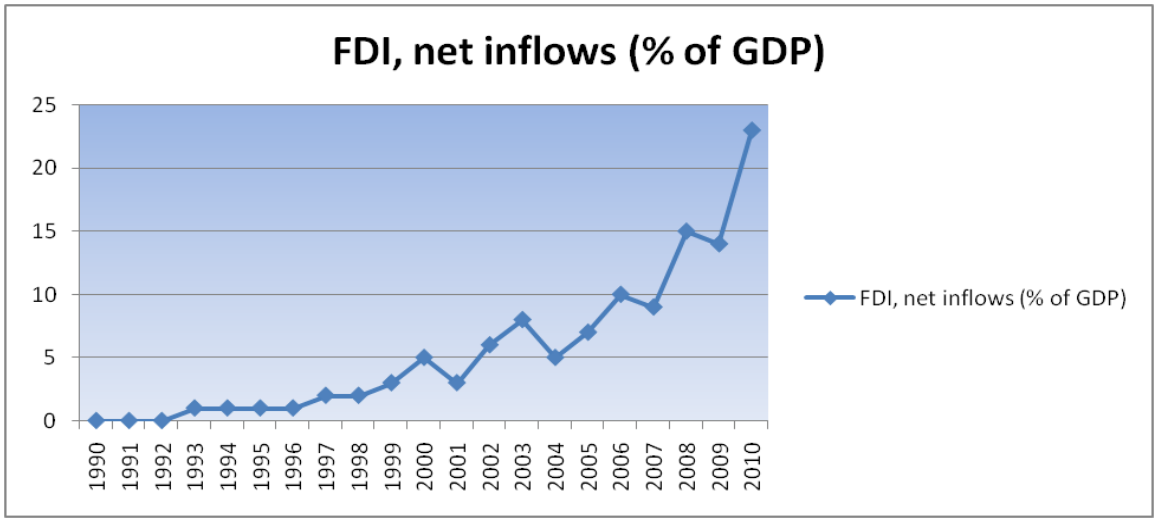
Expressions “Foreign investment” and “Business entity with foreign investment” are described in the “Foreign Investment Law of Mongolia” dated May 10, 1993 as follows:

- “Foreign investment means every kind of tangible and intangible property which is invested in Mongolia by a foreign investor for the purpose of establishing a business entity with foreign investment within the territory of Mongolia or for the purpose of jointly operating with an existing business entity of Mongolia."
- "Foreign investor means a foreign legal person or individual (foreign nationals and stateless persons not residing permanently in Mongolia and citizens of Mongolia permanently residing abroad) who invest in Mongolia."
- “A business entity with foreign investment - a business entity which is incorporated under the laws of Mongolia and in which the contribution of a

foreign investor is not less that 20 percent of the registered capital shall constitute a business entity with foreign investment“.

From the Figure 2.6, we can observe that structural changes formed in 1992, privatization of state enterprises and their failure together with diffraction of socialist countries caused foreign investment halt. In 1992 foreign investment reached its lowest level during the last 20 years. In other words, foreign investment declined to 1.7% of GDP in 1992 from 8.2% of GDP in 1991 and 11.8% in 1990 accordingly.

Figure 2.6 *FDI inflows (% of GDP) in Mongolia*



Source: World Databank

However, approval of “Foreign investment law of Mongolia” in 1993, foundation of taxation environment, commencement of free floating exchange rate regime, and establishing good economic co operations with other countries pushed foreign investment level to rise in 1993.

Foreign investment was a half of the total investment during 1994-1995 and it was fluctuating at that time. However FDI, which is considered an important factor for economic development, rose to 3.3% of GDP in 1995 from 1.5% in 1994. Hence it can be observed that although the share of FDI in total investment was little its share in foreign total investment had been starting to increase from that time. Owing to the Government measurements such as organizing yearly forum for the foreign investors, stabilization of the economy, improvement in macroeconomic indicators, steady

political background, favourable legal and taxation environment, making studies on the market and higher returns in some sectors, foreign investment has started to increase promptly from year 2000 and has reached 23% of total GDP in 2010.

In order to investigate the influence of FDI flows to the Mongolian economy, the FDI inflows are divided into sectors. Data in this section is limited and I could only provide a data in time series of 1990-2004 from the national statistical office of Mongolia.

Table 2.1 *Foreign Direct Investment in Mongolia: sectorial share in total FDI, 1990-2004*

(by percentage (%))

Sectors	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Geological prospecting and exploration	~	~	~	~	9.40	21.48	7.81	36.15	42.34	28.77	17.97	46.38	22.01	76.33	62.29
Trade and catering service	89.69	25.28	5.25	10.60	9.16	2.43	2.68	18.00	7.79	5.90	5.92	4.20	51.22	3.51	15.81
Light industry	~	~	39.69	18.00	24.98	5.07	22.46	3.70	10.49	22.07	28.97	4.02	1.65	2.39	8.86
Processing of animal originated raw materials	~	0.84	14.14	44.70	15.81	18.79	16.83	3.24	4.92	9.55	12.34	5.10	0.17	0.21	1.42
Engineering construction and production of building materials	~	4.74	~	0.95	12.55	4.37	8.37	9.90	16.11	6.56	8.68	6.64	3.42	1.21	1.28
Banking and financial services	~	~	~	~	~	0.05	8.18	0.60	0.21	2.51	0.75	16.06	2.29	0.06	1.03
Transportation	0.00	26.30	1.30	1.63	3.63	3.44	2.00	6.73	1.40	4.30	6.79	0.47	0.66	1.16	0.77
Telecommunication	~	~	~	1.31	1.67	28.39	3.37	0.18	0.01	3.54	0.08	0.13	0.25	2.08	0.50
Culture, education, science, and press	10.36	~	~	2.04	5.74	2.26	2.52	0.82	0.73	3.07	5.56	0.11	1.96	1.21	0.39
Production of foods and beverages	~	~	14.28	2.83	3.01	1.40	2.81	8.14	1.63	2.50	1.40	0.29	1.71	0.37	0.19
Tourism	~		0.26	2.18	5.01	0.76	14.52	0.60	0.65	0.24	0.32	0.08	0.41	0.42	0.18
Agriculture	~	27.93	2.26	5.07	0.24	0.71	1.54	3.26	3.10	3.82	0.27	0.67	0.20	0.04	0.11
Energy	~	0.86	0.00	0.29	0.00	2.23	0.21	0.63	1.18	0.06	1.98	0.91	0.11	0.13	0.09
Furniture production	~	0.00	4.04	5.85	0.15	1.01	0.10	0.36	0.36	1.07	0.71	0.89	0.51	0.26	0.04
Health and beauty services	~	2.37	0.52	1.75	1.19	0.37	0.52	0.73	2.59	1.62	0.54	0.07	0.11	0.24	0.02
Public service	~	~	~	~	~	1.00	0.97	0.75	0.13	0.39	0.50	0.06	0.02	0.01	0.02
Electronics manufacturing	~	~	1.84	2.01	0.58	0.03	1.40	0.02	0.11	0.44	0.03	0.00	0.01	0.09	0.01
Jewelry and gifts	~	~	~	~	1.22	0.03	0.07	0.16	2.19		0.01	0.03	0.00	0.03	0.01
Houseware production	~	11.68	2.62	~	~	0.58	0.02	~	0.01	0.21	0.05	0.05	0.08	0.18	0.01
Others	~	~	13.78	0.77	5.67	5.59	3.63	6.02	4.05	3.37	7.14	13.85	13.21	10.03	6.97
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Mongolian National Statistical Office

Since 1991 the most of the FDI inflows have been located in mining and quarrying industry. In this relation, the GDP growth of mining and quarrying industry has been robust in recent years. For instance, the industry's FDI inflows have been 25, 17, 57 million USD in 1999, 2002, 2001 years respectively, while the growth reached 3.2, 6.1, and 10.1 percent in those years. The second largest receiver of FDI inflows is manufacturing industry, mostly textile sector. In 1999, 2000 the FDI inflows into industry reached 31 and 38 million USD respectively, but the industry's GDP fell down and it can be inferred that the positive spill over from FDI had a lagged effect. However, in 2001 the industry experienced a strong performance, growth reaching 31.8 percent. Also since the year 1991 the cumulative amount of the FDI inflows into transport, storage and communication; wholesale and retail trade, repair of motor vehicle, motorcycle and personal and households' goods industries have reached 103 and 119

million USD respectively and the industries' GDP growth have been higher. In 2009 according to national development authority 65% of FDI was located in mining and quarrying industry and 21% of FDI inflow was located in trade and catering service.

In the beginning of 1990s a few countries like China and Japan were the first large investors and then nowadays there are 70 countries are investing in our country. China (USD 0.1-135.3 million), Canada (USD 0.01-120.1 million), South Korea (USD 1.3-23.0 million), Japan (USD 0.07-17.1 million), USA (USD 0.09-10.3 million) and Russia (USD 0.03-6.4 million) invest the biggest volume of the total FDI into Mongolia. These figures prove a large interval in the investment size of the above countries, which implies capital inflows to small economies from donor countries are volatile and instable.

Table 2.2 *FDI in Mongolia by countries, 1990-2004*

Appendix 7. Foreign Direct Investment in Mongolia by Contries , 1990-2004 (in millions of dollars)

Countries	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
China	865.5	100.0	592.9	1 381.0	2 227.6	3 159.0	5 257.2	9 357.6	24 673.1	22 192.3	33 011.3	47 529.2	135 343.9	45 369.6	126024.0
Canada	~	~	~	~	~	~	150.0	6 144.1	67.6	10.0	40.0	44.0	5 949.3	120 113.4	51455.0
South Korea	~	~	~	~	2 820.0	5 029.3	1 252.0	2 884.5	3 380.4	9 543.3	11 066.8	23 013.8	15 773.2	6 092.7	6507.0
Japan	100.0	532.9	~	74.8	1 831.7	8 476.9	12 688.5	904.5	3 769.9	3 793.0	17 114.6	1 517.2	2 765.3	6 859.9	5431.0
USA	~	~	90.4	~	1 113.7	2 742.7	10 253.1	1 652.0	1 681.0	5 127.6	7 776.0	2 438.3	2 641.5	465.8	3233.0
Russia	~	1 407.0	597.6	260.7	1 817.3	6 374.6	3 680.9	3 795.5	2 172.2	1 406.9	2 403.8	5 702.3	1 566.2	2 532.9	2258.0
Bulgaria	~	~	~	~	~	20.3	~	221.9	1 934.9	21 453.8	12.0	3 566.6	~	6.0	2.0
China/Hongkong/	~	~	30.0	546.5	159.5	309.3	8 262.5	1 107.3	1 931.9	1 597.1	3 689.3	1 933.0	361.3	1 718.2	3127.0
Great Britain	~	18.1	480.0	~	571.8	116.3	2 019.7	2 877.4	1 322.3	3 259.7	6 127.0	2 245.6	1 803.8	467.7	7455.0
Virjinia islands of UK	~	~	~	~	~	~	~	~	~	40.0	1 338.6	15 040.0	62.0	1 472.2	16528.0
Bahamas	~	~	~	~	~	~	~	~	~	25.0	~	14 589.4	200.0	~	1270.0
China/Taiwan/	~	~	5.0	600.0	~	600.3	119.6	186.0	772.1	5 578.4	858.5	1 769.2	275.7	192.3	127.0
Italy	~	~	~	~	~	7 235.8	130.0	741.4	419.5	2 140.4	19.5	6.0	41.7	~	32.0
Singapore	~	~	~	200.0	24.5	359.9	1 263.0	6 052.3	521.8	175.6	126.7	265.5	154.0	8.0	60.0
Ukraine	~	~	~	~	~	3.7	50.7	~	152.1	15.8	3 337.5	36.1	53.2	2 427.4	57.0
Germany	~	~	100.0	~	390.0	132.4	512.4	1 041.2	461.5	471.7	350.6	708.1	1 211.1	517.8	420.0

Source: Mongolian National Statistical Office

If we look at a dominance of a particular country in the number of enterprises, Chinese enterprises are mainly in trade and catering services and engineering construction and production of building materials. Thus Chinese enterprises (56-322) are majority in the total number of the above sectors. Canadian enterprises are mainly in the mining sector (17-125) which bear the biggest share in total number. After 2004 Chinese investors always been in main role of FDI and in 2009 about 60% of investment has been made by Chinese enterprise. In the recent year Canadian company investing large amount of investment in Oyu Tolgoi project which is as much as GDP of Mongolia in 2011.

2.3 Attracting factors of FDI in Mongolia

Effective use of foreign direct investment (FDI) provides an additional opportunity to reach the state's economic and social development. Therefore, this kind of research remains relevant in the contemporary economy. It is well known that the improvement of public policy in the sphere of foreign investment is one of the driving forces of economic development in the country. Investment activity in Mongolia, political and economic reforms are largely limited, primarily due to lack of own funds of enterprises to conduct business. The source of funding for the economy of Mongolia in the conditions of a lack of own investment resources are foreign investments in various forms.

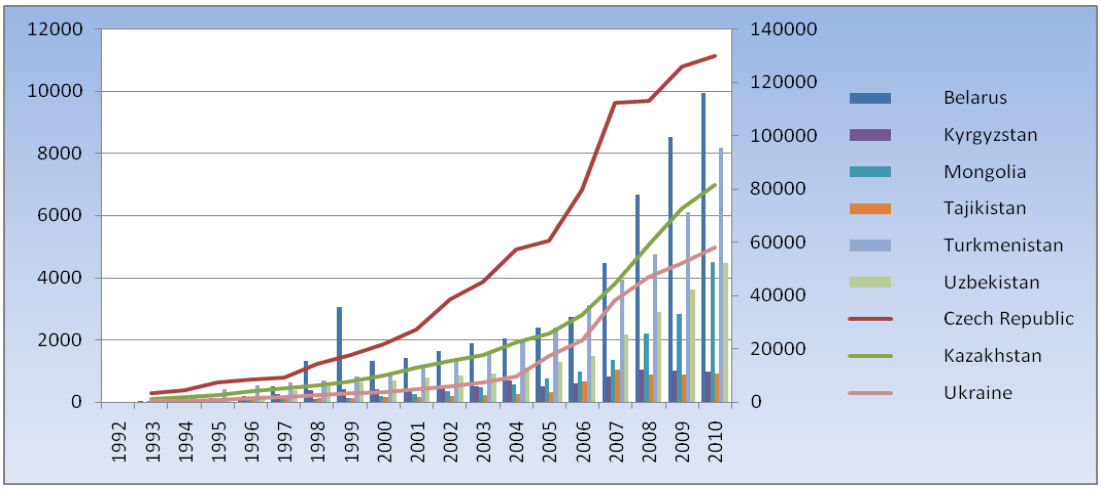
Foreign direct investment (FDI) plays an important role in modern Mongolia and it is determining the dynamics of economic growth, the depth and scope, as well as the rate of transformation of economic systems at national and regional levels. The positive impact of FDI is manifested not only through extension of funding from foreign sources, but also due to such external effects, those both technological and institutional externalities.

FDI is attracted by certain factors that form the comparative advantage of the region. Such as: economic indicators, the level of development of physical infrastructure, the level of institutional development of the region, the regional economic policy, openness of the region for foreign economic relations, geographical features of the region etc. With the establishment of joint ventures with foreign capital, Mongolia imported technology and relevant institutions that the principles of corporate conduct which accelerates the process of market reform and institutional development infrastructure.

The process of stimulating FDI inflows can be considered at three levels: nationally, regionally and at the level of individual firms, or investment project. Stimulation of FDI at the national level is associated mainly with the macroeconomic policy, financial stability and restructuring. Regional level of stimulation of FDI involves activities in various areas - from development to production formation of

transport and business infrastructure development and socio-cultural environment, combining micro-and macro-economic factors of decision-making foreign investors under direct investment. Provision of FDI at the firm level involves consideration of many subjective factors, including the important place occupied by the quality of investment projects, "transparency" of the company and to protect the interests of owner's opportunistic behaviour.

Figure 2.7 *Inward FDI in transition economies, 1992-2010*



Source: UNCTAD stat

The processes of transformation and the formation of a market economy in many countries in the 1990s were accompanied by the increasing role of foreign venture capital in the creation and development of market institutions, economic growth. In today's global economy, practically all countries, particularly developing and transition countries, all longer compete with each other for more foreign direct investments to ensure receipt of capital, technology, management skills, information, goods and services that contribute in the long run economic growth of the country.

After the transformation and opening the Mongolian economy for the foreign investors it has already passed more than fifteen years. However, Mongolia still lags far behind many countries in transition economies in terms of the incoming capital. In Mongolia there are certain factors that attract FDI and also can be indicated as comparative advantages of the country. Those are as follows:

- Political stability
- Openness of the economy
- Possibility to enter neighbour country's larger scale market (Russia and China)

- Huge amount of natural and mineral resources reserve
- Young and educated labour force
- Enormous-scale land
- Pure and virgin nature
- Supporting government policy of FDI
- Membership of global organizations (IMF, WTO etc.)

Above all of these factors, enormous reserve of natural and mineral resource is the main attracting factor of FDI in recent years, because of discovering Oyu Tolgoi mining which is the world's largest copper-gold ore and using its resources, it is expected upon completion to account for more than 30% of the country's GDP. In the following chapter I am going to estimate which attracting factor is significant to FDI using data from national statistical office of Mongolia, World data bank and some other resources.

2.4 Oyu Tolgoi mining project[9]

Oyu Tolgoi is developing a mine that will exploit one of the world's largest undeveloped copper-gold resources. The resource is so large that the mine is expected to be operating for at least 50 years.

The Oyu Tolgoi deposit was discovered by Ivanhoe Mines, a Canadian company, in 2001. Rio Tinto, one of the world's largest companies, is a major shareholder in Ivanhoe Mines and has been actively involved in the project since 2005. In 2010, Rio Tinto formally assumed management of the project on behalf of all shareholders. Oyu Tolgoi is owned by Ivanhoe Mines (66 per cent) and Erdenes Oyu Tolgoi (34 per cent). Erdenes Oyu Tolgoi is wholly owned by the Government of Mongolia.

Oyu Tolgoi is the largest single investment in the history of Mongolia. It will require capital investment of US$6 billion, in addition to the US$1 billion spent on exploration and evaluation. This is a very significant stimulus to an economy where the Gross Domestic Product was US$6.2 billion in 2010.

According to the International Monetary Fund (IMF), the Government of Mongolia will be the largest beneficiary from Oyu Tolgoi - Mongolia will receive 55 per cent of the project cash flow.

The project is a major employer of Mongolians. During the peak of the construction phase, more than 15,000 people will be employed on the project, including

[9] Source: www.ot.mn

10,000 Mongolians. When the mine begins operating in 2013, there will be a workforce of approximately 3,500 people, 90 per cent of whom will be Mongolian.

CHAPTER 3

Regression analysis of FDI inflows

In this chapter I am going to show the relationship between FDI inflow and GDP using econometric estimation and evaluate the significance of foreign investment in the country's GDP growth. Further, I will try to estimate which economy sector in Mongolia is the most related to FDI and also I will try to answer the question of which factor is the most attracting factor when we invite FDI (to determine the most comparative advantage of Mongolia.) In this regression analysis the data has been chosen in time series of 1990-2010.

Regression analysis of FDI inflow, Domestic investment and total GDP

In this analysis I am going to use the Coubb-Douglass model function in which a dependent variable GDP is regressed on a constant and independent variables of FDI inflow and domestic investment. The Coubb-Douglass model function is as follow.

$$GDP_t = \boldsymbol{\alpha} * FDI^{\boldsymbol{\beta}}_t * DI^{\gamma}_t * \boldsymbol{\varepsilon}$$

t=1990,1991…2010

GDP - gross domestic product of Mongolia in USD (mil.)

FDI – foreign direct investment inflow in Mongolia in USD (mil.)

DI – domestic investment

α, β, γ – parameters that will be estimated in the model

ε – disturbance of the model with zero mean value and constant variance

All data represents FDI, domestic investment and GDP for the estimation are in the Appendix A. Corresponding data are provided by World Bank database. In this estimation I used Ordinary Least Square method in order to calculate the unknown parameters. In order to use this method our model function must be transformed into logarithmic scale. Using a Gretl program I will estimate the unknown parameters. After logarithmic transformation my model looks as follows:

$$LnGDP_t = \boldsymbol{\alpha}' + \boldsymbol{\beta} * LnFDI_t + \boldsymbol{\gamma} * LnDI_t + \boldsymbol{\varepsilon}'$$

t=1990,1991…2010

By running regression on program gretl (which is available free download on www.**gretl**.sourceforge.net) I found the best estimate of unknown α, β *and* γ and some useful results shown below.

Model 1: OLS, using observations 1905/06/13-1905/07/02 (T = 20)
Dependent variable: LnGDP

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	2.98645	0.385906	7.7388	<0.00001	***
LnFDI	0.0950874	0.0292535	3.2505	0.00471	***
LnDI	0.672318	0.0750845	8.9542	<0.00001	***

Mean dependent var	7.524402	S.D. dependent var	0.628744
Sum squared resid	0.405118	S.E. of regression	0.154371
R-squared	0.946064	Adjusted R-squared	0.939718
F(2, 17)	149.0939	P-value(F)	1.66e-11
Log-likelihood	10.61432	Akaike criterion	-15.22865
Schwarz criterion	-12.24145	Hannan-Quinn	-14.64552
rho	0.074153	Durbin-Watson	1.597878

Interpretation

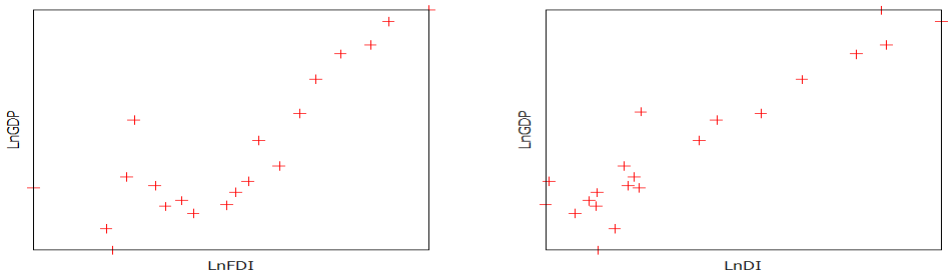
After the estimation our model become

$$Ln\mathit{GDP}_t = \boldsymbol{2.98645} + \boldsymbol{0.0950874}\mathit{LnFDI}_t + \boldsymbol{0.672318}\mathit{LnDI} + \boldsymbol{\varepsilon}$$

In order to rely on my estimation, I have to check certain assumptions whether it is valid result or not. There are basic assumptions to justify the use of linear regression model, which are explained below.

- ***Linearity*** of the relationship between dependent and independent variables. Using graphical method, which is examination of scatter plot we can see if there is straight line between dependent variable and independent variable. In our case scatter plot is as follow:

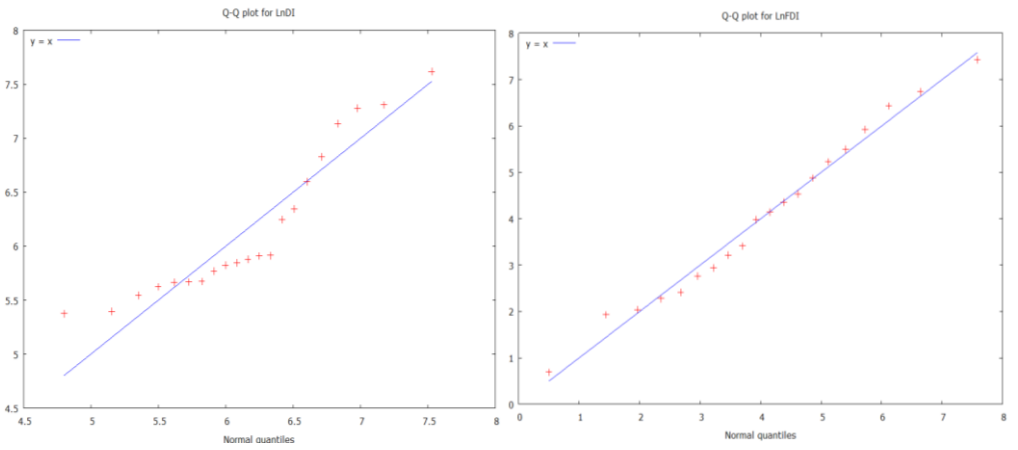
Figure 3.1 *Linearity of the relationship between dependent and independent variables*



- ***Autocorrelation*** of the disturbances. Existence of autocorrelation has negative impact in the estimation of the model. Using Durbin – Watson test we can determine the autocorrelation of the disturbance. In our estimation Durbin – Watson statistic equals 1.597878. The statistical value between 1.4 and 2.6 for sample size of 50 implicates less probability of residuals autocorrelation in the model.

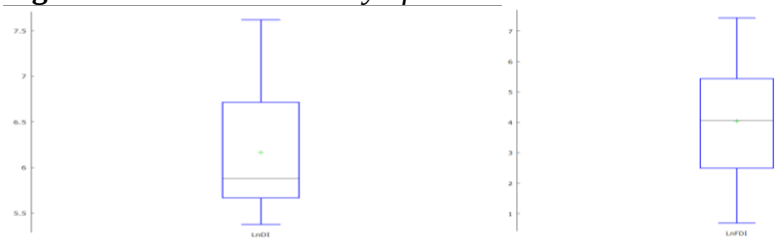
- ***Normality*** of the error distribution. This assumption is one of the most important one and we can check the normality of the error distribution by Shapiro-Wilk test. Result is: W = 0.982079, with p-value 0.958028.
  High value of p-value indicates that normality assumption in the model cannot be rejected on any reasonable level of significance. Moreover there is a graph of normality shown below.

Figure 3.2 *Normal plot of residuals distribution*



- Homoscedasticity of the disturbance.

Figure 3.3 *Homoscedasticity of the disturbance*



If the heights of the boxes are different, the plot suggests that the variance across groups is not homogeneous which fulfils the assumption of homoscedasticity and it is not broken.

- Multicollinearity of the independent data. This is a condition that independent variables are highly correlated to each other. Using a gretl program I can calculate correlation between independent variable.
  Corr(LnFDI, LnDI) = 0.74216378 , under the null hypothesis of no correlation:
  t(18) = 4.69807, with two-tailed p-value 0.0002 which cannot reject the null hypothesis.

After checking certain assumptions now I can introduce valid results from regression model.

Standard errors reflect how much sampling fluctuation a statistic will show. In this estimation standard errors are 0.385906, 0.0292535 and 0.0750845 respectively which measure how sure the computer feels about its choice of estimate. When the sample is representative, the standard error will be small which fulfils our example.

Thus, the *t*-statistic measures how many standard errors the coefficient is away from zero. Generally, any *t*-value greater than +2 or less than - 2 is acceptable. The higher the *t*-value, the greater the confidence we have in the coefficient as a predictor. Low *t*-values are indications of low reliability of the predictive power of that coefficient. In this estimation we have t-value equals to 3.2505 and 8.9542 which I am very confident about coefficient.

If p-value corresponding the estimates of alpha is less than 0.05 (critical value at 95% significance level), then we reject the null hypothesis of alpha=0, which mean alpha is not equal to zero. We obtained empirical finding for the particular model, that alpha estimate is positive (not significantly greater than zero though). This would imply that FDI and DI are the part of GDP and even if the economy as the whole were expected to receive none FDI and DI (if FDI=0 and DI=0), GDP in the economy would create certain amount by its other sectors.

This model valid 94%, which we can see it from the R-squared equal to 0.946064.This proves that there exist high relationship between FDI inflow, Domestic investment and GDP. From the model I can conclude that there is a positive relation between FDI inflows, DI and GDP and those independent factors are significant to GDP growth. As we can see from the estimation results we can observe that coefficient of DI

is higher than coefficient of FDI, which I can conclude that domestic investment has more significant to GDP growth and if domestic investment increases by 10% then it will positively affect GDP by 6.7% as a whole.

Regression analysis of FDI inflow and attracting factors

In this analysis I am going to try to show the relation between FDI inflow and attracting factors of economy using a FDI inflow panel data from World Bank data base and GDP and total labour force data from Mongolian national statistical office. Data of mining licenses issued in Mongolia is provided by Mineral Resource Authority of Mongolia. In order to investigate which factor is significant to FDI I chose Coubb-Douglass model function as follows.

$$FDI_t = \alpha * GDP_t^{\beta 1} * I_t^{\beta 2} * L_t^{\beta 3} * P_t^{\beta 4} * ML_t^{\beta 5} * \upsilon$$

t= 1990, 1991… 2010

GDP – gross domestic product at current price

I – index of openness[10]

L – Total labour force

P – Political stability index

ML – mining licenses issued in Mongolia

α - intercept of the model which will be estimated and interpreted in the model

$\beta_1 ... \beta_5$ - corresponding parameters that must be estimated in the model

υ – Disturbance in the model with zero mean value and constant variance

I use an Ordinary Least Squares method to estimate the data and in order to use this method our model function must be transformed into logarithmic scale. Using a Gretl program I will estimate the unknown parameters. After logarithmic transformation my model looks as follows:

$$LnFDI_t = Ln\alpha + \beta_1 LnGDP_t + \beta_2 LnI_t + \beta_3 LnL_t + \beta_4 LnP_t + \beta_5 LnML_t + \varepsilon$$

t= 1990, 1991… 2010

[10] Index of openness = (exp + imp)/GDP

In order to rely on the estimation of my model I have checked all the assumptions of the linear regression model as previous estimation and all the assumptions had no conflict so I am introducing results of the estimation as follows. I suppose that the data used in the analysis originated from random selection and expected mean values of disturbances are zero.

By running regression on program gretl using a data from Appendix B (which is available free download on www.**gretl**.sourceforge.net) I found the best estimate of unknown $\alpha, \beta \; and \; \gamma$ and some useful results shown below.

Model 1: OLS, using observations 6-21 (n = 16)
Dependent variable: LnFDI

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	-70.2828	17.7387	-3.9621	0.00268	***
LnGDP	0.907683	0.345904	2.6241	0.02542	**
Ln_Index_of_ope	1.41466	0.811346	1.7436	0.11183	
Ln_Total_labour	10.1148	2.95668	3.4210	0.00654	***
Ln_Political_St	0.518015	0.243502	2.1274	0.05928	*
Ln_Mining_licen	-0.285127	0.117474	-2.4271	0.03562	**

Mean dependent var	4.611183	S.D. dependent var	1.515919
Sum squared resid	0.557141	S.E. of regression	0.236038
R-squared	0.983837	Adjusted R-squared	0.975755
F(5, 10)	121.7393	P-value(F)	1.27e-08
Log-likelihood	4.157186	Akaike criterion	3.685629
Schwarz criterion	8.321161	Hannan-Quinn	3.923006

Interpretation

According to the gretl program results, all the independent variables except Index of openness are significant to FDI, which I can conclude that those independent variables are one of the best attracting factors of FDI in Mongolia based on the statistical data. Some attracting factors are cannot literally interpreted by statistical data. (Size of the land, government policy etc.) Growth in GDP of the economy has a positive affect in FDI inflow. It shows to the investors that there is a market potential in the country. Furthermore, total labour force is a best and the most significant factor in the model, which I could conclude that usually foreign investors intend to use labour force

with a lower-cost in the host country in order to decrease their production cost. Having a cheap and reliable labour force would be one of the best attracting factor for FDI. From the estimation we can see that the political stabilization factor has a least significance to the model. Usually investors prefer to make a stability contract with the government in the first place in order to protect their future long-term activity and this contract stays valid even though if there is a dramatic change in government and country is politically unstable. Number of mining licence issued in Mongolia indicates how much mineral resources have being used over the years. It shows also amount of mineral resources in the country. In our estimation number of mining licence has negative impact on FDI, which can be concluded that mineral resource is the one of the main attracting factor of FDI. However when issuing number of mining license increases, investors would think that there is a less mineral resources and they would not want to invest anymore. Model validation is 98%, which we can see it from the R-squared equal to 0.983837. That means independent variables have very high relation to explaining dependent variable.

To conclude all above regression analysis on FDI attracting factors, total labour force would be the most significant factor to attract FDI inflow. On the other hand estimation result shows that openness of the country has the least significance to the FDI. In my opinion Mongolia is import-oriented country and calculated index of openness cannot be the attracting factor to the FDI. Other independent variables are significant to FDI on some level. I chose those factors as an attraction of the FDI based on the available data. There are other factors that attract FDI inflow and foreign investors such as: geographical features, economic policy, legislation, and membership of global organization etc. In order to invite FDI and use its efficiency to the country's development, Mongolia should concern each and every factor that I mentioned above. Using its huge amount of natural and mineral resources, building a better legislation system and economic policy, creating environment with full of opportunities, Mongolia could be the one of the developed country in very short time.

Conclusion

Foreign Direct Investment (FDI) is one of the most important factors of economic growth, especially in developing countries. Because of its importance, many different economists and writers have established certain theories and hypothesis and defined FDI in their own ways. From the Classical theory (1776) to the new trade theory (1980) it has been over 200 years of development in concept of Foreign Direct Investment. There is no specific definition of FDI and a classical definition is a "company from one country making a physical investment into building a factory in another country". Multinational enterprises (MNEs), also referred to as transnational corporations (TNCs) or simply multinationals are always linked with FDI. For the current level of development of world economy is characterized by the internationalization of the economy. It has been expanding the volume of foreign operations of firms, especially their foreign direct investment over the past 30 years. FDI flow into economy comes in various ways and types of flow determine its multiplier effect in economy. There are five broader types of FDI exists and those are export-oriented FDI, market-development investment, government-initiated investment, acquisition investment, and Greenfield investment. There is a growing view in recent years that FDI is positively correlated with economic growth. Borensztein et al. (1998), using a dataset of FDI flows from industrialized countries to sixty-nine developing countries, find that FDI is an important vehicle for transferring technology and higher growth only when the host country has a minimum threshold of human capital.

Mongolia is a landlocked country in East Central Asia and it is one of the fastest growing economies in the world. Mining, agriculture and herding sectors are the main sectors of the economy. Over the years investment is the key factor to the Mongolian economy and it has reached from 14% to 70% of GDP over 20 years. FDI is playing important role in the economy. In 1992 it was 2.0 million USD and over the years it has been growing constantly and has reached 1454 million USD in middle of 2010. FDI inflow of Mongolia is divided in to main sectors of economy. According to national development authority, 65% of FDI was located in mining and quarrying industry and 21% of FDI inflow was located in trade and catering service. Chinese investors always been in main role of FDI and in 2009 about 60% of investment has been made by

Chinese enterprise. In the recent year Canadian company investing large amount of investment in Oyu Tolgoi project which is as much as GDP of Mongolia in 2011.

Oyu Tolgoi is developing a mine that will exploit one of the world's largest undeveloped copper-gold resources. The resource is so large that the mine is expected to be operating for at least 50 years. Existence of Dutch disease in Mongolia recently has not occurred yet, but it is always better to learn from the others past mistake to avoid its consequences and create better place for ourselves.

From the regression analysis of FDI inflow I conclude that there is a positive relation between FDI inflows, DI and GDP and those independent factors are significant to GDP growth. As we can see from the estimation results we can observe that coefficient of DI is higher than coefficient of FDI, which I can conclude that domestic investment has more significant to GDP growth and if domestic investment increases by 10% then it will positively affect GDP by 6.7% as a whole. Moreover from the second regression analysis I found out that total labour force is the most significant factor to attract FDI inflow. On the other hand estimation result shows that openness of the country has the least significance to the FDI. In my opinion Mongolia is import-oriented country and calculated index of openness cannot be the attracting factor to the FDI. Other independent variables are significant to FDI on some level. I chose those factors as an attraction of the FDI based on the available data.

There are other factors that attract FDI inflow and foreign investors such as: geographical features, economic policy, legislation, and membership of global organization etc. In order to invite FDI and use its efficiency to the country’s development, Mongolia should concern each and every factor that I mentioned above. Using its huge amount of natural and mineral resources, building a better legislation system and economic policy, creating environment with full of opportunities, Mongolia could be the one of the developed country in very short time.

Appendix A

Year	Total investment % of GDP	GDP in USD	GDP in USD (mil.)	LnGDP	Total investment in USD (mil.)	FDI inflow in USD (mil.)	LnFDI	Domestic investment in USD (mil.)	LnDI
1990	14.491	2560785663	2560.79	7.85	371.08	0.00		371.08	5.92
1991	24.472	2379018323	2379.02	7.77	582.19	11.12	2.41	571.07	6.35
1992	28.14	1317611863	1317.61	7.18	370.78	2.00	0.69	368.78	5.91
1993	38.911	768401666	768.40	6.64	298.99	7.70	2.04	291.29	5.67
1994	35.389	925817090	925.82	6.83	327.64	6.90	1.93	320.74	5.77
1995	25.323	1452165053	1452.17	7.28	367.73	9.80	2.28	357.93	5.88
1996	26.915	1345719435	1345.72	7.20	362.20	15.90	2.77	346.30	5.85
1997	25.57	1180934217	1180.93	7.07	301.96	25.00	3.22	276.96	5.62
1998	27.351	1124440238	1124.44	7.03	307.55	18.90	2.94	288.65	5.67
1999	27.111	1057408608	1057.41	6.96	286.67	30.40	3.41	256.27	5.55
2000	23.78	1136896162	1136.90	7.04	270.35	53.70	3.98	216.65	5.38
2001	27.85	1267997923	1268.00	7.15	353.14	63.00	4.14	290.14	5.67
2002	21.403	1396555772	1396.56	7.24	298.90	77.80	4.35	221.10	5.40
2003	29.468	1595297301	1595.30	7.37	470.10	131.50	4.88	338.60	5.82
2004	30.634	1992066759	1992.07	7.60	610.25	92.92	4.53	517.33	6.25
2005	36.5	2523359941	2523.36	7.83	921.03	187.62	5.23	733.41	6.60
2006	34.5	3395917892	3395.92	8.13	1171.59	245.46	5.50	926.13	6.83
2007	38.5	4234894168	4234.89	8.35	1630.43	372.76	5.92	1257.67	7.14
2008	51.2	5623236708	5623.24	8.63	2879.10	844.70	6.74	2034.40	7.62
2009	46.2	4583834427	4583.83	8.43	2117.73	623.61	6.44	1494.12	7.31
2010	50.667	6200357070	6200.36	8.73	3141.53	1691.42	7.43	1450.11	7.28

Appendix B

Year	GDP in USD	GDP in USD (mil.)	FDI inflow in USD (mil.)	Export in USD (mil.)	Import in USD (mil.)	Index of openness	Total labour force	Political Stability, No Violance	Mining license issued in mongolia
1990	2560785663	2560.79	0.00	660.70	924.00	0.62	747.75		
1991	2379018323	2379.02	11.12	348.00	360.90	0.30	775.49		
1992	1317611863	1317.61	2.00	388.40	418.30	0.61	801.16		
1993	768401666	768.40	7.70	382.60	379.00	0.99	819.74		
1994	925817090	925.82	6.90	356.10	258.40	0.66	833.99	0.64	3
1995	1452165053	1452.17	9.80	473.30	415.30	0.61	846.36	0.65	75
1996	1345719435	1345.72	15.90	424.30	450.90	0.65	863.51	0.67	39
1997	1180934217	1180.93	25.00	568.50	468.30	0.88	880.68	0.47	52
1998	1124440238	1124.44	18.90	462.30	503.30	0.86	899.84	0.28	45
1999	1057408608	1057.41	30.40	454.20	512.80	0.91	921.05	0.56	45
2000	1136896162	1136.90	53.70	535.80	614.50	1.01	946.44	0.83	77
2001	1267997923	1268.00	63.00	596.20	637.70	0.97	971.70	0.95	217
2002	1396555772	1396.56	77.80	524.00	690.40	0.87	997.15	1.08	447
2003	1595297301	1595.30	131.50	615.40	790.90	0.88	1021.73	0.88	477
2004	1992066759	1992.07	92.92	869.10	1019.30	0.95	1050.74	0.65	1018
2005	2523359941	2523.36	187.62	1063.90	1177.30	0.89	1079.80	0.82	1166
2006	3395917892	3395.92	245.46	1542.00	1435.00	0.88	1108.74	0.66	1032
2007	4234894168	4234.89	372.76	1947.50	2061.80	0.95	1137.47	0.67	574
2008	5623236708	5623.24	844.70	2534.50	3244.50	1.03	1130.20	0.56	593
2009	4583834427	4583.83	623.61	1885.39	2137.67	0.88	1152.84	0.52	628
2010	6200357070	6200.36	1691.42	2908.50	3200.05	0.99	1183.24	0.51	235

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